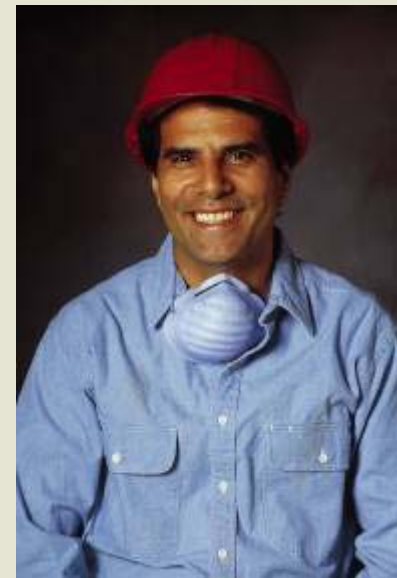




## JOHN J. HELDRICH CENTER FOR WORKFORCE DEVELOPMENT

# State of the Energy Workforce: Closing the Skills Gap



# Workforce Challenges

- Aging incumbent workforce.
- Trend toward early retirement within energy sector.
- Absence of a regular “pipeline” for lower-level workers.
- Loss of institutional knowledge.
- Mismatch between skill needs of employer job openings and skills possessed by job applicants.

# Workforce Challenges

- Young adults moving into the workplace or to postsecondary education lack **information** about the energy sector and the constantly changing U.S. labor market.
- Young adults have a special need for timely, accurate, accessible, comprehensive, and easy-to-understand information about the **skills** the sector demands.
- Such information is also urgently needed by the parents, teachers, and counselors who advise young people about careers.
- Incumbent workers, displaced job seekers also lack up-to-date information on opportunities within the utility industry.

# New Jersey Career Connections Model

Combine a “**high-tech**” Web-based career information system with a “**high-touch**” outreach program to educate students and parents about the realities of today’s workplace and provide the tools state residents need to be savvy consumers in a constantly changing labor market.



# New Jersey Career Connections Model

## Key Elements

- **Research** the specific skill needs and work trends affecting key state industries, such as Utilities/Infrastructure (*Ready for the Job*).
- Share career information through an easy-to-understand **Web-based system** ([www. NJNextStop.org](http://www.NJNextStop.org)).
- Build **business-education partnerships** to disseminate career information to students, parents, teachers, and school counselors statewide (*Career Connections*).
- Tap **training sources** of state agencies (Labor, Education, Employment & Training Commission), WIBs, and state government leaders.

# Ready for the Job

## Research on High-Demand Skills

Heldrich Center at Rutgers University documented the skill and education requirements of high-demand jobs in eight key New Jersey industries.

### *“Ready for the Job” Partners*

- State Employment and Training Commission
- NJ Department of Education
- NJ Department of Labor & Workforce Development
- Workforce Investment Boards
- County Colleges
- Industry Sector Advisory Boards

# Ready for the Job

## Goals

Identify the current and short-term future workforce skill needs, competencies, and educational requirements for:

- Energy/Utilities/Infrastructure
- Manufacturing
- Transportation & Logistics
- Health Care
- Tourism & Hospitality
- Information Technology
- Construction
- Finance



# Ready for the Job

- Conducted more than 30 focus groups and more than 80 employer interviews
- Utility and other industry sector reports available online at

[www.heldrich.rutgers.edu](http://www.heldrich.rutgers.edu)

[www.njnextstop.org](http://www.njnextstop.org)

- Pending Reports:  
In-Depth Utility Skills Study, Retail, Emerging Skills,  
Port Facilities



# Ready for the Job

## Goals

- Link supply and demand sides of the New Jersey labor market. System must be **employer-led, demand-driven**.
- Build **ongoing** partnerships between public workforce development resources and employers.
- Improve curricula and career information for K-12, college students, workers, and job seekers.

# Ready for the Job

## High-Demand Utility Occupations

Jobs/careers where New Jersey utility companies are having the most difficulty recruiting due to a shortage of skilled workers:

- First and Second Line Supervisors
- Managers of Mechanics, Installers, Repairers
- Line Workers (power line service)



# Ready for the Job

## High-Demand Utility Occupations

- Customer Service Representatives (including call center clerks, bilingual staff, and employees able to deliver specialized services above an entry level)
- Engineers (electrical, mechanical, civil)
- Power Mechanics
- Mechanics at Substations
- Meter Readers



# Ready for the Job

## **High-Demand Utility Occupations**

- Project Managers (mid to senior level)
- Plant Operators
- Plant Maintenance Staff, including Industrial Maintenance Generalists
- Skilled Laborers/Construction
- Dispatchers

# Ready for the Job

## **High-Demand Utility Occupations**

- Entry-Level Distribution Staff (welders, pipe fitters, pipe layers)
- Instrumentation and Control (relay technicians)
- Appliance Service/Emergency First Responders
- Home Installation and Service
- Service Truck Drivers

# Ready for the Job

## **Cross-Cutting Skill Requirements for Entry-Level Utility Candidates**

- More bilingual employees
- Language skills (communication, ESL, general basic literacy, plus more specific “technical literacy” in certain areas of utility work)
- Attitude/employability skills, including diversity training
- Basic math (arithmetic, fractions, basic algebra)

# Ready for the Job

## **Cross-Cutting Skill Requirements for Entry-Level Utility Candidates**

- Computer literacy (MS Office, Windows, keyboard ability)
- Coding (analyze/memorize procedures)
- Safety training, including new security requirements
- Pole training (for line workers)
- Commercial drivers' licensing for field staff
- Clerical skills for selected positions

# Ready for the Job

## Next Steps

- **Basic Skills/Remediation for “Near Misses”:**  
Evaluate job candidates who come close to passing the companies’ entry-level skills test to see which areas of training could be strengthened.
- **Create Cross-Cutting “Core Training” Courses,** highlighting skills common to power, telecom, and water utilities:

Safety/security training, heavy equipment training, CDL, computer applications, communication skills, diversity, and basic workplace requirements.



# Ready for the Job

## Next Steps

- **Pool trainees for limited demand jobs**, drawing trainees from multiple utilities in numbers great enough to sustain ongoing instruction. Hire retired utility professionals as trainers.
- **Offer supervisory/leadership training** to identify potential supervisors within existing workforces, and to reach supervisors with relevant skills from **outside** the utility industry.
- **Expand incumbent worker training** in basic areas of leadership, communications/writing/e-mail, computer applications, customer service (how to deal with difficult customers), and problem solving.
- **Support a permanent state utility advisory board**, as part of a NJ Economic Development strategy.

# NJNEXTSTOP.ORG

## **“High-Tech” Online Information System**

- Dynamic web site combines Ready for the Job skills research with labor market information.
- Attracts 63,000 visitors per year, downloading 20,000 copies of Heldrich Center industry skill reports.
- Unites a variety of data sources and displays career information in an easy-to-understand format.
- Features both high-level and low-level jobs in demand.

# NJNEXTSTOP.ORG

## **“High-Tech” Online Information System**

- Uses bright colors and youth-oriented graphics to appeal to high school students.
- Incorporates job profiles and career advice.
- Monthly e-newsletter provides new content to registered users of the site.
- Assists parents, teachers, and counselors to help students make better-informed career and education decisions.

new jersey

**Next Stop Your Career**

Put Yourself In Demand

**[www.NJNextStop.org](http://www.NJNextStop.org)**



# NJNEXTSTOP.ORG

- Descriptions of high-demand jobs in utility industry.
- Statistical overviews of weekly earnings and projected job growth.
- Advice from state's top employers about their industries and professions.

New Jersey Next Step - Microsoft Internet Explorer

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Address <http://www.njnextstop.org> Go Links

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new jersey  
**Next Stop...Your Career**  
Put Yourself in Demand

home parents & counselors about this website contact us

**Focus Industry**

- construction
- finance
- manufacturing
- utilities/infrastructure
- transportation and logistics
- information technology
- health care
- tourism
- emerging industries

**Welcome!**

You demand great things for yourself. And as candidates for tomorrow's work force, employers will demand great things from you. Want to know the skills you'll need to succeed in leading New Jersey industries? Then you have made an essential stop along your path of career prep.

At njnextstop.org, find out what New Jersey's employers are saying about jobs and careers growing right here in the Garden State. Get vital details about industries, types of jobs, and the cutting-edge career paths that combine many of your talents.

[learn more](#)

**Real People**

**Name:** Stephanie Clemente  
**Education:** Immaculata High School  
**HomeTown:** Somerville  
**Occupation:** Nurse in Training

**Lifeline**

**Hop on a Forklift And Dig Into Your Future**

Job prospects in the building trades look good, even if you would rather spin a test tube than a cement mixer. Angelos Tofiles of

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# NJNEXTSTOP.ORG

- **Real People** offers articles, interviews, and advice from other New Jersey young people taking their first steps in college and career.
- **LifeLine** offers articles about scholarships, life management skills, résumé writing, learning to overcome poor work habits, and tackling your first job interview.
- **Show Me the Money** reveals the salaries – and required skills – for numerous occupations.
- **Career Paths** and **Top 10 Industry Employer** Links.
- **Industries** described with New Jersey statistics.



# NJNEXTSTOP.ORG

## Utility Occupation Page

http://www.njnextstop.org/Occupation.asp?OccuID=62

njhome | my new jersey | people | business | government | departments

new jersey  
**Next Stop...Your Career**  
Put Yourself in Demand

home | parents & counselors | search the site | contact us  
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click to get training

### Occupation: First-Line Supervisor/Managers of Mechanics, Installers, and Repairers

**Summary**  
Industry : [Utilities/Infrastructure](#)  
Career Path : [Management/Supervision](#)

These are the go-to guys or girls. First-line supervisors of mechanics, installers and repairers oversee and coordinate the work of front-line skilled and trade workers. They also manage work sites to make sure that work methods and procedures are kept on schedule and within budget. First-line supervisors also coordinate personnel actions for mechanics, installers and repairers such as training, performance evaluations, promotions, transfers and disciplinary measures. Often, first-line supervisors must work with union representatives to solve problems and coordinate work activities. Workers in this category also conduct pre-job research on a work site to detect environmental hazards. First-line supervisors must interpret blueprints and job orders and inspect completed work to make sure it conforms to standards.

First-line supervisors need sharp business and accounting skills to monitor project budgets. They must also be able to communicate well and to convey accurate information to labor and skilled workers, union representatives and multiple project partners. These workers must also have a thorough understanding of

### At A Glance

Mean Annual Wages	\$59,210
Est. Number Employed 2002	12,700
Proj. Number Employed 2012	14,000
Percent Change 2002-2012	10.1%
Annual Openings	450

**Required Degree**  
High school diploma

**Preferred Degree**  
Bachelor's - Business Management, Engineering

**Required Credential**  
2-4 years on-the-job experience

**Other Jobs in the Career Path**

- [Construction Managers](#)
- [First-Line Supervisors and Managers - Construction Trades and Extraction Workers](#)
- [Computer and Information](#)

Focus Industry

- construction
- finance
- manufacturing
- utilities/infrastructure
- transportation and logistics
- information technology
- health care
- tourism
- emerging industries
- what's new
- read the full reports

Register with NJ Next Stop

Email:



# Career Connections

## **“High-Touch” Partnership and Outreach**

- A diverse Steering Committee of top business and education groups working together since 2003 to educate NJ students, parents, teachers, and school counselors about 21st century job skills and career options.
- Aligning student education programs with employer skill needs and high-demand job openings.
- Convening statewide conferences to showcase successful Business-Education Training Partnerships and new Apprenticeship Options.
- Promoting online career information to 200+ NJ high schools through the state’s NJNextStop web site, Verizon’s Access New Jersey network, and the Heldrich Center web site.

# Career Connections

## Steering Committee Members

- NJ Department of Education
- NJ Commission on Higher Education
- NJ School Counselors Association
- NJ Principals & Supervisors Association
- NJ Education Association
- NJ School Boards Association
- NJ Council of County Colleges

# Career Connections

## **Steering Committee Members**

- NJ Business & Industry Association
- NJ State Chamber of Commerce
- NJ Alliance for Action
- NJ Utilities Association
- Trenton Public Schools
- Vineland Public Schools
- Public Service Enterprise Group
- Verizon NJ

# Career Connections

## 2006-2007 Projects

- Upgrade Heldrich “Career Connections” web site to enhance content.
- Raise visibility of Access NJ and “Career Connections” at statewide conferences.
- Create new Access NJ “hot careers” content.
- Expand business-education partnerships.
- Host statewide simulcast training at high schools in North, Central, and South Jersey locations.
- Create a “Back to School Night” career options packet for parents and educators.